

- d) a plumbing tray disposable underneath the transfer chamber having facility connections for each process chamber and load lock chamber; and
- e) a chamber tray disposable adjacent each process chamber, load lock chamber and transfer chamber, the chamber tray in fluid communication with the facility connections of the plumbing tray.

REMARKS

This is intended as a full and complete response to the Final Office Action dated January 14, 2002. Claims 1, 7-8, 11-16, 18-22, 28 and 29 are pending in the application and stand rejected. Applicants have cancelled claim 7 without prejudice and have amended base claims 1 and 29 to include the subject matter of cancelled claim 7. Applicants' proposed amendments do not require further consideration and/or a new search. Applicants respectfully request entry of these amendments and reconsideration of the claims for reasons discussed below.

Claims 1, 7, 11, 13-16, 18-20, and 28-29 stand rejected under 35 U.S.C. § 102(b) as being anticipated by *Rubin et al.* (U. S. Patent No. 4,852,516). The Examiner states that "*Rubin et al.* shows the invention as claimed including a multi-chamber apparatus including an initial load lock chamber for storage connected to a multitude of process chambers each chamber including a modular plumbing tray 172 and a chamber tray including links which include water lines, gas lines, vacuum lines, drain lines, and communication lines."

Applicants respectfully traverse the rejection. The Examiner has provided no support to reject claim 28. In particular, claim 28 recites "a transfer chamber comprising one or more process access ports". *Rubin et al.* does not teach, show or suggest at least this limitation.

Rubin et al. discloses a linear, modular processing system. Each modular processing apparatus 100 consists of a chassis 102 that is connectable to "an underlying service facility docking subassembly 104." (See, *Rubin et al.* at col. 4, lines 1-2.) Each modular processing apparatus 100 is moveable from a remote location to a facility subassembly 104. (See, *Rubin et al.* at col. 5, lines 55-57.) A common service

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conduit 172 provides facilities to the facility subassembly 104. (See, *Rubin et al.* at col. 6, lines 12-15.) Each modular processing apparatus 100 also consists of a processing module 176. *Rubin et al.* teaches that "certain ones" of the modular processing apparatuses 100 are provided with a wafer transporting mechanism 178. (See, *Rubin et al.* at col. 8, lines 1-4.) *Rubin et al.* also teaches that a single transporting mechanism 178 permits transfer of a silicon wafer between adjacent processing modules 176. (See, *Rubin et al.* at col. 8, lines 27-30.)

Therefore, *Rubin et al.* does not teach, show, or suggest a transfer chamber comprising one or more process access ports, as recited in claim 28 and those dependent therefrom. Applicants have amended base claims 1 and 29 to include this same limitation. Accordingly, Applicants submit that the claims are not taught or suggested by the reference. Withdrawal of the rejection is respectfully requested.

Claims 1, 7, 11, 13-16, 18 and 28 stand rejected under 35 U.S.C. § 102(e) as being anticipated by *Lei et al.* (U. S. Patent No. 6,083,321). The Examiner states that *Lei et al.* shows the invention as claimed including a transfer chamber 90; a modular plumbing tray 10 adjacent the transfer chamber and having connections from the facility to the process chambers; and a chamber tray adjacent the one or more of the process chambers including an injection control valve 18, the chamber tray having facility connections connected to one or more of the facility connections in the plumbing tray. The examiner further states that components of the gas delivery system are listed in column 4, lines 48-58 and may include pumps and gas supplies and the respective plumbing required.

Applicants respectfully traverse the rejection. *Lei et al.* teaches a gas delivery system 10 that is attached to a process chamber 30. (See *Lei, et al.* at col. 2, line 66 through col. 3, line 7). The process chamber 30 is disposable about a transfer chamber 90. The gas delivery system 10 comprises all of the gas delivery components. (See, *Lei et al.* at col. 4, lines 40-57.) Contrary to the Examiner's assertion, the injection control valve 18 is not part of a "chamber tray" as recited in the claims. The valve 18 is just one component found in the gas delivery system 10. (See, *Lei et al.* at col. 4, lines 40-57.)

Therefore, *Lei et al.* does not teach, show, or suggest a plumbing tray disposable adjacent a transfer chamber and having facility connections for each process chamber

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and load lock chamber, and a chamber tray disposable adjacent each process chamber, load lock chamber and transfer chamber, the chamber tray in fluid communication with the facility connections of the plumbing tray, as recited in claims 1, 28, and 29 as well and those dependent therefrom. Accordingly, Applicants respectfully request withdrawal of the rejection.

Claims 1 and 7 stand rejected under 35 U.S.C. § 102(b) as being anticipated by *Maier et al.*, (U.S. Patent No. 4,715,921).

Applicants respectfully traverse the rejection. The Examiner stated in the Advisory Action dated December 3, 2001, that claim 1 is patentable over *Maier et al.* because *Maier et al.* does not teach or suggest a chamber tray disposable adjacent each process chamber, load lock chamber and transfer chamber, the chamber tray in fluid communication with the facility connections of the plumbing tray, wherein each process chamber is disposable on each chamber tray, as recited in claim 1 and those dependent therefrom. Since the Examiner has provided no other reason to reject the claims, Applicants submit that the Examiner mistakenly rejected claims 1 and 7. Accordingly, withdrawal of the rejection is requested.

Claim 4 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over *Rubin et al.* (U.S. Patent No. 4,852,516). The examiner states that *Rubin et al.* fails to show manifolds for vacuum, gas, water, or helium. The examiner further states that manifolds are well known in the art and the inclusion of manifolds in *Rubin et al.* would be *prima facie* obvious in order to provide the required services to the process chambers.

Applicants respectfully traverse the rejection on grounds that the Examiner has not established a *prima facie* case of obviousness. Applicants disagree with the Examiner's assertion that "manifolds are well known in the art and the inclusion of manifolds in *Rubin et al.* would be *prima facie* obvious in order to provide the required services to the process chambers." No prior art has been cited to support this assertion. Insofar as this record shows, if such a fact is well known, it is only from the Applicant's own disclosure. Obviousness is determined at the time of the invention, not by what is later learned in the art or by what is gleaned from the Applicant's own disclosure. Withdrawal of the rejection is respectfully requested.

Furthermore, the teaching or suggestion to make the claimed invention and the reasonable expectation of success must both be found in the prior art, not in the applicants' disclosure. See M.P.E.P. § 2143, citing *In re Vaack*, 947 F.2d 488 (Fed. Cir. 1991). *Rubin et al.* discloses a linear, modular processing system, not a cluster tool as described in the claimed invention, as stated above. Further, the Examiner has not shown anywhere in the record that the service facility docking subassembly 104 (which the Examiner asserts to be equivalent to Applicants' chamber tray) taught by *Rubin et al.* can be modified to include manifolds to provide the required services to the process chambers. The Examiner has, therefore, made a two-step extrapolation to arrive at the claimed invention without motivation or suggestion from within the prior art. Accordingly, withdrawal of the rejection is respectfully requested.

Claim 8 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over *Lei et al.* (U.S. Patent No. 6,083,321) or *Maher et al.* (U. S. Patent No. 4,715,921). The Examiner states that both *Lei et al.* and *Maher et al.* lack anticipation of a transfer chamber containing six access ports. The Examiner asserts that both *Lei et al.* and *Maher et al.* describe a plurality of access ports connecting the process chambers and the transfer chamber. The Examiner, therefore, asserts that it would have been obvious to form at least six access ports in the transfer chamber of *Lei et al.* and *Maher et al.* depending upon the particular process flow being conducted.

Applicants respectfully traverse the rejection. Claim 8 depends from claim 1 and is patentable for at least the same reasons as claim 1. Withdrawal of the rejection is respectfully requested.

Furthermore, regarding *Lei et al.*, Applicants respectfully traverse the rejection on grounds that §103 obviousness was improper in view of commonly assigned 102(e) prior art. *Lei et al.* is §102(e) prior art that may not preclude patentability under §103 obviousness. Both *Lei et al.* and the claimed subject matter were, at the time the invention was made, subject to an obligation of assignment to Applied Materials, Inc., the assignee of both *Lei et al.* and the present invention. Accordingly, the rejection is improper, and withdrawal of the rejection is respectfully requested.

Claim 12 stands rejected under 35 U.S.C. 103(a) as being unpatentable over *Lei et al.* (U.S. Patent No. 6,083,321). Applicants respectfully traverse this rejection on

grounds stated above. *Lei et al.* is §102(e) prior art that may not preclude patentability under §103 obviousness. Withdrawal of the rejection is respectfully requested.

Claims 21-22 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Rubin et al.* (U.S. Patent No. 4,852,516). The Examiner states that *Rubin et al.* lacks anticipation of the particular wafer handling means including a lift and a pedestal. The Examiner "takes official notice that these are well known types of wafer handling techniques and would have been obvious to implement in the primary reference of *Rubin et al.*"

Applicants respectfully traverse the rejection. Claims 21 and 22 depend from claim 1, and thus are patentable for at least the same reasons. Withdrawal of the rejection is respectfully requested.

In conclusion, the references cited by the Examiner, neither alone nor in combination, teach, show, or suggest the claimed invention. Having addressed all issues set out in the office action, Applicants respectfully submit that the claims are in condition for allowance and respectfully request that the claims be allowed.

Respectfully submitted,



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APPENDIX

Claims 1 and 29 have been amended as follows:

1. (Amended) An apparatus for processing substrates, comprising:
 - a) a transfer chamber comprising one or more process access ports;
 - b) one or more load lock chambers disposable about the transfer chamber;
 - c) one or more process chambers disposable about the transfer chamber;
 - d) a plumbing tray disposable adjacent the transfer chamber and having facility connections for each process chamber and load lock chamber; and
 - e) a chamber tray disposable adjacent each process chamber, load lock chamber and transfer chamber, the chamber tray in fluid communication with the facility connections of the plumbing tray, wherein each process chamber is disposable on each chamber tray.

29. (Amended) An apparatus for processing substrates, comprising:
 - a) a transfer chamber comprising one or more process access ports;
 - b) one or more load lock chambers disposable about the transfer chamber;
 - c) one or more process chambers disposable about the transfer chamber;
 - d) a plumbing tray disposable underneath the transfer chamber having facility connections for each process chamber and load lock chamber; and
 - e) a chamber tray disposable adjacent each process chamber, load lock chamber and transfer chamber, the chamber tray in fluid communication with the facility connections of the plumbing tray.